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High Altitude Urbanization

Developing Strategies for New Territories

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Synopsis

High altitude urbanization in Europe refers to alpine architectural or infrastructural projects and territorial scenarios developed over the altitude limit where the natural environment enhances permanent living conditions.

The research starts from the first approach toward European highest mountains, on a primitive and temerarious phase, analysed as an anthropological phenomena, covering the basic human needs for orientation and shelter, to the slow development of high altitude mountaineering culture, that ultimately turned into mass altitude tourism. Through tourism the paradigm changed, the highest European summits became development catalysts, under the mirage of adrenaline and adventure, in a still virgin and extreme environment.

The hostile and extreme high altitude zones have been transformed through new building and infrastructural technologies into a safe, reachable, exciting and global playground for everybody's entertainment. Alpine high altitude urbanization has recently intensified and modifies the landscape, enhancing the necessity of new sustainable territorial strategies.

Key words: High altitude, tourism, urbanization, infrastructure.

1. Premises

High altitude territories, where permanent living is no longer possible because of extreme natural phenomena, as low temperatures and lack of oxygen, have revealed a challenging background for architecture. In Europe, the highest summits have recently become magnets for an intense development of mass tourism, as entertainment providers.

The well-known summits Mont Blanc or Matterhorn/Cervino have polarized in their surrounding areas many new anthropic elements, from architectural objects to infrastructure, starting an unprecedented phenomenon of urbanization and temporary intensive colonization at high altitudes.

2. Short History of High Altitude Architecture and Tourism in Europe

In Europe, reaching high altitudes is a rather recent phenomenon. Till the XVIIIth century, the Alps were seen only as a source of danger and a territorial obstacle. The Romantic Movement transformed the way high mountains were perceived and disclosed the beauty of their landscapes. Scientist and artists reached and discovered high altitudes long before tourists. The first shelters, called temples of nature, were used for observation and contemplation.

In 1786 the mountaineers Balmat and Paccard reached the summit of Mont Blanc marking the starting moment of the heroic¹ mountaineering era. Then, the first rudimentary shelters were built on the Mont Blanc route. In this incipient phase, high altitude architecture was rather a primitive gesture, a basic relationship between humans and an unknown, hostile territory².

From a phenomenological point of view, alpine architecture insured an existential foothold³, providing protection and orientation. High altitude shelters were positioned in strategic and safe locations, covering and controlling large areas, as a support and reward for the temerarious climbers.

Mountaineering became slowly popular and new constructions appeared at high altitudes. At the end of the XIXth century the Swiss Alpine Club started to question the opportunity of building in high mountains and the impact on the wild landscape. SAC created in 1886 a set of rules⁴ for building in the mountains. In 1923 the Italian Academic Alpine Club had a first attempt to find a territorial solution to this new issue by equipping all classic routes with prefabricated bivouacs (Fig.1 – Forcella a Vu Bivouac, Marmolada), in order to eliminate the necessity for any other further buildings.

Nevertheless, high altitudes remained a dangerous zone, the access being limited to those who accepted to assume the intrinsic risks, train and endure Spartan conditions.

¹ GIBELLO, Luca, 2011. Cantieri d'alta quota. Biella: Lineadaria.

² MACHEDON, Ana-Maria, 2016. High Altitude Architecture – A link between Primitive and Global Architecture. In Between Scales. EURAU. Bucuresti: Editura Universitara "Ion Mincu". p.1099-1106.

³ SCHULTZ, Christian-Norbert, 1984. Genius Loci: Towards a Phenomenology of Architecture, New York: Rizzoli.

⁴ Règlement concernant les cabanes du SAC



Figure 1.

3. High Altitude Architecture and Mass Tourism

Winter sports brought an intensive development in the alpine resorts and the problem of urbanization and densification appeared in lower alpine zones. Still, high altitude areas were avoided by mass tourism for a long period.

The social paradigm changed once the concept of leisure through sports mutated into the necessity of glorious but safe personal achievements, to be praised by the personal entourage. A 2005 study⁵ on the Swiss Alpine resorts revealed stagnation in alpine tourism, showing that mountains lost their attractiveness. This stagnation was followed by a significant decline in winter sports activities. The use of ski facilities decreased in Switzerland of 19.6%, from winter 2005/2006 to winter 2014/2015⁶.

While resorts have reduced their magnetism, a new trend emerges: high altitude safe adventures. New transportation facilities, from cable to helicopter, made suddenly high altitudes very accessible. The highest European peaks became catalysts for tourism. Mont Blanc summit is an almost compulsory destination and personal achievement for any individual once in a lifetime. A recent survey from Petzl⁷ reveals that 35.000 mountaineers visit every year Mont Blanc.

⁵ DIENER, Roger, Jacques HERZOG and Pierre DE MEURON, 2005. Die Schweiz Ein städtebauliches Portrait. Basel: Birkhäuser

⁶ SONNETTE, Stéphanie, 2017. Pourtant que la montagne est belle... Tracés. no.1, p.6-9.

⁷ www.petzl.com



Figure 2.

The new tendencies awaked the interest of architects for high altitude projects. They found a perfect territory for creating iconic objects and experimenting the latest technologies. A relevant example is the Monte Rosa Hut, built in 2009, designed by an extended team of Swiss engineers and architects. It was the first altitude project that involved a significant financial investment and scientific support. The result changed the vision on dwelling at high altitudes. The hut provides all needed facilities and transforms high altitude survival into a comfortable journey. Projects like Gervasutti Bivouac in 2011 (Fig.2) by Testa and Gentilcore closely followed the idea of providing comfort at high altitudes.

4. Territorial strategies

Alpine resorts have already faced the massive urbanization and densification problem. Mountains absorb a large number of tourists in a process of temporary colonization. Different territorial concepts have been studied for lower alpine areas in order to control the impact on landscape. A 2012 Ph.D. study⁸ at EPFL proposes a linear strategy concentrating all touristic facilities along the road infrastructure and connecting them directly to cable transportation.

But the densification and colonization phenomena have moved from lower alpine zones and affect high altitudes. Transportation is one of the keys to the massive development. In the Mont Blanc area, cable transportation (Fig.3 – Mont Blanc Panoramic cable car) already touched the scale of a territorial complex network connecting different valleys, resorts, regions and even countries (Fig.4). The infrastructural nodes concentrate touristic functions and become incipient settlements at high altitudes, as Aiguille du Midi touristic complex in Mont Blanc Massif.

⁸ PIÀ, Fiona, 2017, *Stratégies de densification des villes en altitude*. Tracés. no.1, p.19-26.

New entertainment functions are invented: the *Tissot Peak Walk*, a bridge connecting two 3.000m peaks, the *Glacier 3000 alpine coaster* or the *Pas dans le vide*, a suspended glass box at 3.840m.



Figure 3.

5. Conclusions

Next to the new, safe and exciting high altitude activities, mobility plays an essential role in the invasion of high altitudes. In order to limit the landscape alteration, a different territorial approach is needed. The new transportation technologies are the catalyst but could also be the antidote for the expansion phenomenon.

Through air transportation, the time spent at high altitudes can be reduced or even eliminated: someone could fly directly to or around Mont Blanc instead of physically crowding the summit surrounding areas. As long as high altitude peaks are the ultimate touristic goal, alpine resorts could be avoided in a further expansion by transforming the sea level cities in new “alpine” resorts.

The current research proposes as future strategic scenario to convert large cities like Milano, Torino, Grenoble, Genève or Zürich in multi-entertainment resorts and airports for the new type of tourists interested in seeing Europe’s most famous and iconic summits like Mont Blanc or Cervino/Matterhorn (Fig.5). Electric plains and helicopters, balloons or dirigible airships could provide a less invasive and disruptive types of air transportation adapted to high altitude wild landscape tours.

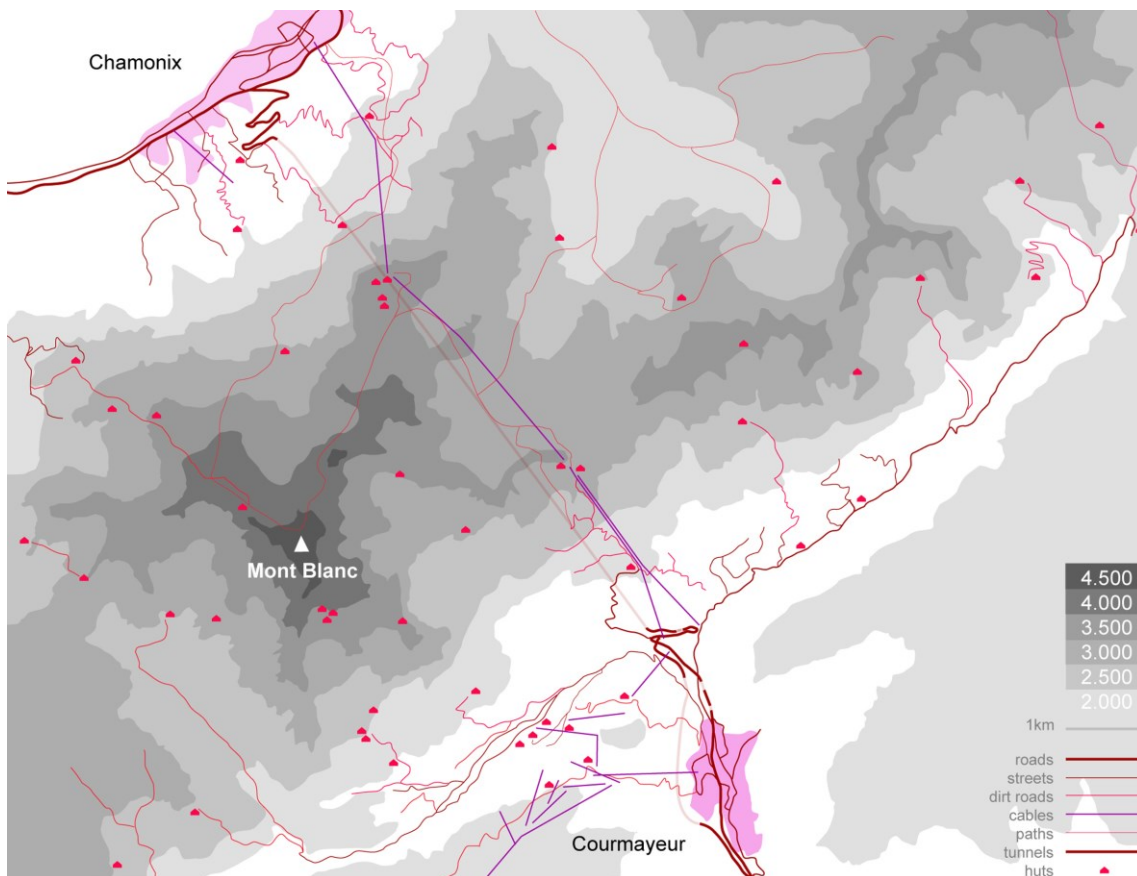


Figure 4.

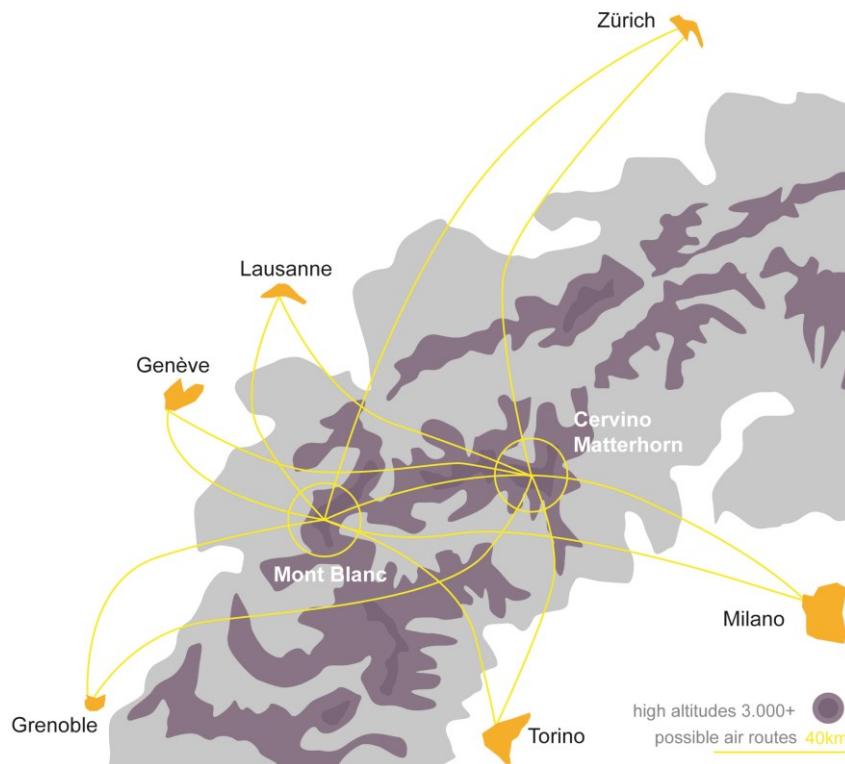


Figure 5.

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Biography

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